

Finally, the classification categories presented in this paper may be used, if required, as qualifiers to existing wetland classifications. For instance, Semeniuk (1987) suggested that a terminology describing vegetation patterns could be used as a tertiary or quaternary qualifier to the wetland types identified primarily on physical attributes. If only the overall vegetation pattern of a wetland needs to be noted as a descriptive qualifier, there may be no need to list the sequence of structural types, and the vegetation classification presented in this paper may be modified to adjectival form, with the substitution of "form" in the nomenclature by "phytic". Thus a lake with periform forest, a sumpland with gradiform heath/sedgeland, and a dampland with zoniform forest/heath/sedgeland could be termed periphytic lake, gradiphytic sumpland and zoniphytic dampland, respectively. In these cases the emphasis is on the classification of the wetland type, and the vegetation adjectival qualifier simply augments the nomenclature of the wetland.

Acknowledgements Dr J Beard and Professor A McComb are thanked for critically reading the MS.

References

- Anderson D J 1981 Introductory notes. In: Vegetation classification in Australia (ed A N Gillison & D J Anderson). CSIRO & ANU Press, Canberra.
- Backshall D J & Bridgewater P B 1981 Peripheral vegetation of Peel Inlet and Harvey Estuary, Western Australia. *J R Soc W Aust* 64: 5-11.
- Beard J S & Webb M J 1974 Vegetation survey of Western Australia: Great Sandy Desert. Univ W A Press, Nedlands.
- Beard J S 1981 Vegetation survey of Western Australia: Swan. Univ W A Press, Nedlands.
- Beeftink W G 1977 The coastal salt marshes of western and northern Europe: an ecological & phytosociological approach. In: Ecosystems of the world I. Wet coastal ecosystems (ed V J Chapman). Elsevier Sci Publ Co, Amsterdam, 109-155.
- Braun-Blanquet J 1932 Plant sociology: The study of plant communities (Transl G D Fuller & H S Conard H S). McGraw-Hill, NY.
- Bridgewater P B 1981 Potential application of the Zurich - Montpellier system of vegetation description and classification in Australia. In: Vegetation classification in Australia (ed A N Gillison & D J Anderson). CSIRO & ANU Press, Canberra, 3-9.
- Campbell E O 1983 Mires of Australia. In: Ecosystems of the world 4B. Mires: Swamp, bog, fen & moor. Regional studies (ed A J P Gore). Elsevier Sci Publ Co, Amsterdam, 153-180.
- Chapman V J 1977 Introduction. In: Ecosystems of the world I. Wet coastal ecosystems (ed V J Chapman) Elsevier Sci Publ Co, Amsterdam 1-29.
- Cook C D K 1968 The vegetation of the Kainji Reservoir site in northern Nigeria. *Vegetatio* 15: 225-243.
- Cook C D K, Gut B J, Rix E M, Schneller J & Seitz M 1974 Water plants of the world. Junk, The Hague.
- Cowardin L M, Carter V, Golet F C & La Roe E T 1979 Classification of wetlands and deepwater habitats of the United States. US Dept of Interior, Fish and Wildlife Service.
- Cresswell I D & Bridgewater P B 1985 Dune vegetation of the Swan Coastal Plain Western Australia. *J R Soc W Aust* 67: 137-148.
- den Hartog C & Segal S 1964 A new classification of the water plant communities. *Acta Botanica Neerlandica* 13: 367-393.
- Denny P (ed) 1985 The ecology and management of African wetland vegetation. Junk, The Hague.
- Fosberg F R 1970 A classification of vegetation for general purposes. In: Guide to the check sheet for IBP areas (ed G F Peterken). IBP Handbook No 4, Blackwell Sci Publ.
- Gleason H 1926 The individualistic concept of the plant association. *Bull Torrey Bot Club* 53: 7-26.
- Golet F C & Larson J S 1974 Classification of freshwater wetlands in the glaciated northeast. Resource Publ 116. US Fish & Wildlife Service, Washington DC.
- Golet F C & Larson J S 1976 Models for evaluation of freshwater wetlands In: Models for assessment of freshwater wetlands (ed J S Larsen). Univ Massachusetts Water Resources Res Centre Publ 32, 13-34.
- Gore A J P (ed) 1983 Ecosystems of the world 4A. Mires: swamp, bog, fen and moor. General studies. Elsevier Sci Publ Co, Amsterdam.
- Hionides H T 1985 Collins Greek dictionary. Collins, London.
- Hofstetter R H 1983 Wetlands in the United States. In: Ecosystems of the world 4B. Mires: swamp, bog, fen and moor. Regional studies (ed A J P Gore). Elsevier Sci Publ Co, Amsterdam, 201-244.
- Hutchinson G E 1975 A treatise on limnology. Vol 3. Limnological botany. Wiley & Sons, NY.
- Ivanov K E 1981 Water movement in mirelands. Academic Press.
- Junk W J 1983 Ecology of swamps on the middle Amazon. In: Ecosystems of the world 4B. Mires: swamp, bog, fen and moor. Regional studies (ed A J P Gore). Elsevier Sci Publ Co, Amsterdam, 269-294.
- Martin A C, Hotkiss N, Uhler F M & Bourn W S 1953 Classification of wetlands of the United States. US Fish & Wildlife Service. Spec Sci Rep Wildl No 20.
- McComb J A & McComb A J 1967 A preliminary account of the vegetation of Loch McNess, a swamp and fen formation in Western Australia. *J R Soc W Aust* 50: 105-112.
- Moore J J 1962 The Braun-Blanquet system: A reassessment. *J Ecol* 50: 761-769.
- Pen L J 1983 Peripheral vegetation of the Swan and Canning Estuaries 1981. Dept of Conserv & Envir Bull 113.
- Pisano E 1983 The Magellanic Tundra Complex. In: (ed A J P Gore) Ecosystems of the world 4B. Mires: swamp, bog, fen and moor. Regional studies. Elsevier Sci Publ Co, Amsterdam, 295-329.
- Poore M E D 1955a The use of phytosociological methods in ecological investigations. I: The Braun-Blanquet system. *J Ecol* 43: 226-244.
- Poore M E D 1955b The use of phytosociological methods in ecological investigations. II: Practical issues involved in an attempt to apply the Braun-Blanquet system. *J Ecol* 43:245-269.
- Poore M E D 1955c The use of phytosociological methods in ecological investigations. III: Practical applications. *J Ecol* 43:606-651.
- Ratcliffe D F 1964 Mires and bogs. In: The vegetation of Scotland (ed J H Burnett). Oliver & Boyd, Edinburgh.
- Raunkiaer C 1934 The life forms of plants and statistical plant geography. Clarendon Press, Oxford.
- Riggert T L 1966 Wetlands of Western Australia. Dept Fisheries & Fauna WA.
- Ruuhijarvi R 1983 The Finnish mire types and their regional distribution. In: (ed A J P Gore) Ecosystems of the world 4B. Mires: swamp, bog, fen and moor. Regional studies. Elsevier Sci Publ Co, Amsterdam, 47-67.
- Scholander P F, Hammel H T, Hemmingsen E A & Garay W 1962 Salt balance in mangroves. *Plant Physiol* 37: 722-729.
- Semeniuk C A 1987 Wetlands of the Darling system - a geomorphic approach to habitat classification. *J R Soc W Aust*, 69: 95-112.
- Semeniuk V & Wurm P A S 1987 The mangroves of the Dampier Archipelago Western Australia. *J R Soc W Aust* 69:29-87.
- Specht R L 1981 Foliage protective cover and standing biomass In: Vegetation classification in Australia (ed A N Gillison & D J Anderson). CSIRO & ANU Press, Canberra, 10-21.
- Spence D H M 1964 The macrophytic vegetation of lochs, swamps and associated fens. In: The vegetation of Scotland (ed J H Burnett). Oliver & Boyd, Edinburgh, 306-425.
- Tansley A G 1939 The British Isles and their vegetation. Univ Press Cambridge.
- Thompson K & Hamilton A C 1983 Peatlands and swamps of the African continent. In: Ecosystems of the world 4B. Mires: swamp, bog, fen and moor. Regional studies (ed A J P Gore). Elsevier Sci Publ Co, Amsterdam, 331-373.
- van der Valk A G 1981 Succession in wetlands: a Gleasonian approach. *Ecology* 62: 688-696.
- Whittaker R H 1962 Classification of natural communities *Botanical Rev* 28: 1-239.
- Whittaker R H (ed) 1980 Classification of plant communities Junk, The Hague.
- Zahran M A 1977 Africa A. Wet formations of the African Red Sea coast. In: Ecosystems of the world I. Wet coastal ecosystems (ed V J Chapman). Elsevier Sci Publ Co, Amsterdam, 215-231.
- Zoltai S C & Pollett F C 1983 Wetlands in Canada: their classification, distribution and use. In: Ecosystems of the world 4B. Mires: swamp, bog, fen and moor. Regional studies (ed A J P Gore). Elsevier Sci Publ Co, Amsterdam, 245-268.

INSTRUCTIONS TO AUTHORS

The *Journal* publishes (after refereeing)

- papers dealing with original research done in Western Australia into any branch of the natural sciences;
- papers concerning some biological or geological aspect of Western Australia;
- authoritative overviews of any subject in the natural sciences, integrating research already largely published in the more specialized national or international journals, and interpreting such studies with the general membership of the Society in mind;
- analyses of controversial issues of great scientific moment in Western Australia.

Prospective authors of papers in the last two categories should consult the Hon Editor for further advice.

Contributions should be sent to **The Honorary Editor, Royal Society of Western Australia, Western Australian Museum, Francis Street, Perth, Western Australia, 6000**. Publication in the Society's *Journal* is available to all categories of members and to non-members residing outside Western Australia. Where all authors of a paper live in Western Australia at least one author must be a member of the Society. Papers by non-members living outside the State must be communicated through an Ordinary or an Honorary Member. Submission of a paper is taken to mean that the results have not been published or are not being considered for publication elsewhere. Free reprints are not provided. Reprints may be ordered at cost, provided that orders are submitted with the return galley proofs. Authors are solely responsible for the accuracy of all information in their papers, and for any opinion they express.

Manuscripts. The original and two copies must be submitted. They should be typed on opaque white paper with double-spacing throughout and a 3 cm margin on the left-hand side. All pages should be numbered consecutively, including those carrying tables and captions to illustrations, which appear after the text. Illustrations, both line drawings and photographs, are to be numbered as figures in a common sequence, and each must be referred to in the text. In composite figures, made up of several photographs or diagrams, each of these should be designated by a letter (eg Figure 2B). To avoid risk of damage to original figures, authors may retain these until after the paper is accepted. The copies of the figures accompanying the manuscript must be of good quality.

Authors are advised to use the most recent issue of the *Journal* as a guide to the general format of their papers. Words to be placed in italics should be underlined. To facilitate editing, papers must be accompanied by a table of contents, on a separate sheet, showing the status of all headings.

Following acceptance and editing of the manuscript, authors with access to word processors/computers should amend their manuscript and forward to the Hon Editor their disk (noting the computer and word-processing program used) and one copy of the paper.

References must be set out as follows:

Paper Jackson A 1931 The Oligochaeta of South-Western Australia. *J R Soc W Aust* 17:17-136.

Twigg L, Majer J D & Kotula R 1983 The influence of fluoroacetate producing plants upon seed selection by seed harvesting ants. *Mulga Res Centre W Aust Inst Technol, Bentley, Ann Rep* 6:75-80.

Book Jacobs M R 1955 Growth Habits of the Eucalypts. For Timb Bur, Canberra.

Chapter in book Dell J 1983 The Importance of the Darling Scarp to Fauna. In: *Scarp Symposium* (ed J D Majer) *W Aust Inst Technol, Bentley*, 17-27.

The **Title** should begin with a keyword. The **Abstract** should not be an expanded title, but should include the main substance of the paper in a condensed form. The metric system (SI units) must be used. Taxonomic papers must follow the appropriate international Code of Nomenclature, and geological papers must adhere to the International Stratigraphic Guide. Spelling should follow the Concise Oxford Dictionary.

Authors should maintain a proper balance between length and substance, and papers longer than 10 000 words would need to be of exceptional importance to be considered for publication. Authors will be charged page costs (currently \$30 per page) if papers exceed 8 printed pages. Short papers (2-4 printed pages) are particularly sought as these often ensure full use of the 32 pages available in each part.

Illustrations. These should be prepared to fit single or double column widths. Illustrations must include all necessary lettering, and be suitable for direct photographic reduction. No lettering should be smaller than 1 mm on reduction. To avoid unnecessary handling of the original illustrations, which are best prepared between 1.5 and 2 times the required size, authors are advised to supply extra prints already reduced. Additional printing costs, such as those for folding maps or colour blocks, will be charged to authors.

Supplementary Publications. Extensive sets of data, such as large tables or long appendices, may be classed as Supplementary Publications and not printed with the paper. Supplementary Publications will be lodged with the Society's Library (C/- Western Australian Museum, Perth, WA 6000) and with the National Library of Australia (Manuscript Section, Parkes Place, Barton, ACT 2600) and photocopies may be obtained from either institution upon payment of a fee.

JOURNAL OF THE ROYAL SOCIETY OF WESTERN AUSTRALIA

CONTENTS VOLUME 72 PART 4 1990

	Page
Natural products from Western Australian marine organisms E L Ghisalberti & P R Jefferies	95
Wetlands of the Darling System, Southwestern Australia: a descriptive classification using vegetation pattern and form C A Semeniuk, V Semeniuk, I D Cresswell & N G Marchant	109

Edited by I Abbott

Registered by Australia Post—Publication No. WBG 0351

No claim for non-receipt of the Journal will be entertained unless it is received within 12 months after publication of Part 4 of each Volume

The Royal Society of Western Australia, Western Australian Museum, Perth

The Journal of the Royal Society of Western Australia was founded in 1914. Its circulation exceeds 600 copies. Nearly 100 of these are distributed to institutions and societies elsewhere in Australia. A further 200 copies circulate to more than 40 countries. The Society also has over 350 personal members, most of whom are scientists working in Western Australia. The Journal is indexed and abstracted internationally.